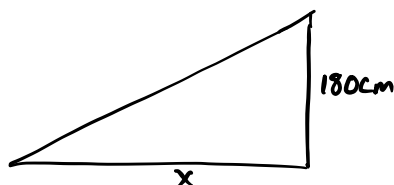


23.P.4]



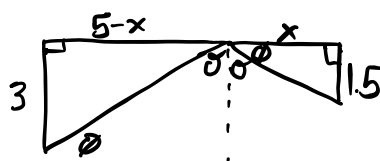
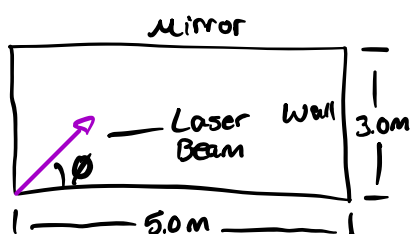
$$\frac{x}{15} = \frac{180}{5}$$

$$x = \frac{180 \cdot 15}{5}$$

$$x = 640 \text{ cm}$$

$$x = 540 \text{ cm}$$

23.P.8]

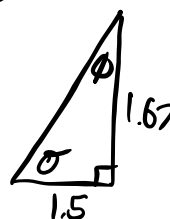


$$\frac{5-x}{3} = \frac{x}{1.5}$$

$$5-x = 2x$$

$$5 = 3x$$

$$x = \frac{5}{3}$$

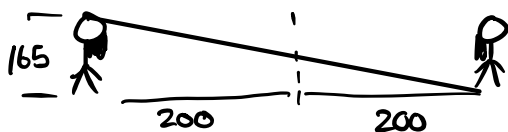


$$\phi = \tan^{-1}\left(\frac{1.5}{1.67}\right)$$

$$\phi = 42^\circ$$

$$\phi = 42^\circ$$

23.P.9]



$$h = \sqrt{400^2 + 165^2} = 432.695 \text{ cm}$$

$$h = 433 \text{ cm}$$

- a.) Nothing will happen to the viewer since the rays of the pencil reflect below the midpoint.
- b.) The image will disappear to the viewer due to the reflection being blocked.